accreditation, submit the test report for review, and that is the safeguard. The test report is reviewed by a third party.

MR. BERRESFORD: And under what --

MR. VARMA: Is this third party the TCB?

MR. HURST: Is a TCB.

MR. BERRESFORD: Yes.

MR. HURST: Independent third party is a TCB and reviews, reviews the test report produced by another test laboratory, by the manufacturer, and accreditation is not a condition.

MR. BERRESFORD: And then under what system or buzz word may a manufacturer do everything by itself and say, "I've done the testing and it passes the test"?

MR. HURST: Under either declaration of conformity or verification, and the difference between the two of those is declaration of conformity states that the manufacturer's test laboratory is accredited. Under verification, there are no requirements that the laboratory be accredited.

MR. BERRESFORD: Okay, thank you.

Yog, did you have --

MR. VARMA: Stan wanted to make a statement.

MR. BERRESFORD: I'm sorry. Yes.

MR. ROBERTS: Thank you. Stan Roberts, ITI.

We'd like to emphasize just once more that

accreditation is not a requirement for Part 68 at the moment. One can register the product, send in the report data. No accredited lab is required.

The other thing we would like to emphasize from ISO Guide 22 that accreditation of laboratories is not called for there either.

So we tend to think that moving from registration or certification today to verification doesn't place any problems, extra burdens for the FCC nor for the manufacturers or suppliers.

We heard yesterday that with all the 3,000 registrations per year, I don't think there is major or gross violations there, so that would be our point that mandatory lab accreditation is not a present requirement.

Thank you.

MR. BERRESFORD: Mr. Salinas.

MR. SALINAS: Jimmy Salinas.

Taking into account where the industry came from with equipment that worked on slow relay, slope hour changes, fairly high currents, and going into the new technology where we're talking about very, very low current, very low power, looking at band bytes, or full bandwidth application, looking at equipment that will be damaged in a nanosecond or a microsecond space where the voltage jumps immediately and my modem goes away, verification is not a

feasible application in that scenario going with the newer technology.

I need to have a lab that is certifiable that they have the capability to measure that response in a nanosecond, have the capability to look at absolute zero references to ground and differences in impedance, have a lab that has the capability to look at a complete full bandwidth, since we're talking about sharing bandwidths on a cable pair, or looking at bandwidth bytes because I'm going to use this low -- this portion, somebody else is going to use another portion, and a different person is going to use another portion all on the same cable pair.

The technology of the network is changing. The newer DSL type technology is changing, which means it needs a tighter control on that type technology. The old rules that exist work fine on a ringing telephone. It worked fine on somebody going off hook and worked very well on dial posts on touch tone.

But when you start talking about I've got a piece of $200.00 equipment sitting out there, and there is a raise in voltage from zero to 600 volts in a nanosecond space that did not affect my telephone but it does affect the newer technology. So a certification type lab would be a preferred method.

MR. BERRESFORD: Thank you.

MR. BIPES: John Bipes, Mobil Engineering.

I want to point out that I think historically there has with the FCC been a de facto sort of lab accreditation. The reason I say that is that FCC has always required that labs that submit data have on file procedures. Historically, the FCC has had a track record on submissions and the integrity of the technical information contained in Exhibit F. There has been scrutinization by -- until as recently as a year ago -- just one person at the FCC who has been overseeing that process.

And in the back of the Part 68 registration guide there has been a list of laboratories and designations as to their capabilities and limitations; whether or not they are NIST or NAV Lab accredited.

And so I would argue that there has been a de facto sort of lab accreditation process in place even though in the U.S. we have not had the formal lab accreditation process that, for example, Industry Canada uses.

I think a critical matter of concern here is third party evaluation. Looking at a designed product from a different point of view with different vests interests can be of great value. We heard yesterday the mention that a manufacturer may wish to take a risk and simply declare that in fact their product will be compliant even before design and production is completed to the point of producing an

artifact to test, and that to me is a quantum leap toward a loss of integrity of the final telecom product from what we have today, and I would discourage going that way.

While I have little doubt about the large telecom manufacturers and their integrity, most of my work as a consultant in a Part 68 test lab has been with very small suppliers who have little to no idea of what network compliance as contained in Part 68 requires, and I have a fear that if those manufacturers in particular are allowed to self-declare that their product, even in advance of an artifact to test being available, that their product complies, that in fact what now happens in the test and registration lab is going to happen with the telecom carriers, it's going to happen with the user, and the feedback loop in correcting that design is going to become much longer.

In the final analysis, it may become a horrible burden for the large manufacturers that are pushing for self-declaration, and it may become in the final analysis a big problem for the FCC where while the trend now is to diminish the FCC involvement, it may at a later point require an awful lot more FCC involvement on a remedial basis.

MR. BERRESFORD: Mr. Wagner.

MR. WAGNER: Yes, John Wagner with Lucent

Technologies.

I'd like to respond to Jimmy Salinas's question and also Mr. Bipes.

If we look as an example as to the past roughly 20 years in Part 15, Part 15 products, other than personal computers, have been allowed to use the verification process in the United States and indeed worldwide ever since the rules, whether they be the U.S. rules or international rules have been adopted.

Part 15 deals with the very bandwidth that Jimmy is talking about. Low frequency to us is probably near a gigahertz. Some of our products we measure to 10 gigahertz, and we have been allowed to do so without the imposition either of a regulatory agency -- filing with a regulatory agency with the exception of PCs in the United States until 1996, but all larger equipment is subject to the verification rules and has been worldwide and certainly manufacturers testing their own products, keeping that data on file and simply placing the product on the market has been extremely successful.

The Part 15 folks stated, in 1995 or 1996, when the rules were being proposed for a change there, that prior to the imposition of Part 15 back in the -- well, the mandatory compliance date was 1993, but the rules were developed in the late seventies, that the FCC was receiving

tens of thousands of reports of interference or complaints of interference during the year. As of 1996, that number had dropped to, I believe, less than half a dozen. So certainly the rules work. The procedure under which manufacturers evaluated their products and placed them on the market works. The problem is gone, and I don't believe that mandatory laboratory accreditation will make that compliance any better.

And the other thing as an international manufacturer that I greatly fear is that if the United States adopts a policy that is viewed internationally as a non-tariff trade barrier, such as making accreditation of laboratories required, there will be, I guess you could say reprisals internationally. We certainly have seen that in the Part 15 arena and it becomes a tremendous reg -- well, not regulatory -- burden for a manufacturer to try to get their products into other markets because all of a sudden we have unusual rules creeping up in those jurisdictions.

Thank you.

MR. BERRESFORD: Mr. Godfrey.

MR. GODFREY: John Godfrey with the Information Technology Industry Council. We represent manufacturers of IT equipment.

First, I'd like to note that we agree with the comment that Pierre Adornato made earlier that the

telecommunication certification bodies would continue to have a role even with a move to verification, and I think in a way this answers the question Mr. Bipes raised.

For the small and medium-size manufacturers, it's critically important that there be an infrastructure of independent testing laboratories that can provide expert services to them. We think that those labs have a very important role to play. The large manufacturers often have their own internal labs -- I think virtually all ITI members do -- that have experience and expertise. Even many of those go to independent laboratories.

But the important point is that it's a business decision to do so, and it's to build in expertise that you want to out-source and confidence that you want to out-source, get an independent review.

Making it a mandatory requirement, we feel, is a step that's not justified by the track record of compliance in this area.

The main difference between verification and the DOC procedure, as you've heard, is between accredited labs and not having to go to an accredited lab. But I don't think you should read that as saying that one process requires you to use a competent lab and the other process allows you to use an incompetent lab. That would -- that is not correct. The reason is that Part 68 is a mandatory

requirement backed up by the Commission's enforcement activities.

If it were not mandatory and there were no enforcement, then we might have some concern, but the backstopping of enforcement is very important. It's what makes it a reasonable business decision for responsible manufacturers to take the steps necessary to make sure their products are in compliance, and when they do that they know they're not going to be undercut by their competitors who cheat the system. They know that won't happen.

Now, I think we heard it mentioned yesterday and I think we all know that there are going to be some small fly-by-night operators who come on the market, cheat the system and then disappear. We don't think the mandatory lab accreditation is going to affect that one way or the other.

The biggest drawback that ITI members see to a mandatory lab accreditation and therefore going to a DOC as opposed to a verification process was just described by John Wagner, although I probably would not characterize what happens internationally as a retaliation against a trade barrier by the U.S.

What I would say instead is that when you make accreditation a mandatory requirement as opposed to a business decision by the company choosing which lab to go to, when you make it a mandatory requirement, then the FCC

has to decide which accreditor's word it's going to accept.

In the Part 15 area, they have put some rules in place for doing that, but there is currently no, and Joe O'Neill, I know, has worked hard to overcome this, but there is currently no worldwide mutual recognition among lab accreditors. So what that means is for international manufacturers when the FCC requires an accreditation by certain specific accreditors, then in a global industry where products -- excuse me, I'm going to have to take a sip of water.

In a global industry where products are being manufactured and tested worldwide, in the absence of a stitched together network of accreditations it literally becomes necessary sometimes to ship components or equipment from where they were being manufactured to another part of the world to be tested again, the exact same tests, solely in order to have them done in a lab that's been accredited by an accreditor that a government body such as the FCC recognizes. This is happening today in the Part 15 area.

Now, we're working to try and stitch together a mutual recognition of accreditation worldwide that will go a long way to solve that problem, but that is really a hurtle that a use of the DOC procedure instead of a verification procedure would create, and we -- we would question what the marginal value of that difference would be to justify

creating that hurtle.

MR. BERRESFORD: Thank you.

Mr. Bishop.

MR. BISHOP: Thank you. This is Trone Bishop with Bell Atlantic. I'd like to make a few comments and at least give my opinion on a few things I've heard this morning.

But I think you should look carefully of the comments filed by the Texas Commission on this matter, where they made a few good points, and one was that the private sector really lacks the incentive to police the market. I know everyone here on this panel is well intentioned and they certainly don't want to see any harm to the network or see the network degraded, and they all promise that either through their verification process or their SDOC that they're going to make sure that their products meets the rules.

But I believe the ACIL as an organization of test labs can probably give you some statistics as to the number of products that are tested by their client companies that fail various aspects of Part 68 the first time through.

So in that regard to a large extent, and incidently, the FCC used to publish some of these statistics in the Billboard Newsletter that they used to circulate, and it was clear that there is a high percentage failures, at least experienced by the test labs.

So this tells me that the rules may be well understood by some segments of the industry, but they are not well understood by all segments of the manufacturing and supplier industry, so there is a significant risk if we just do away with FCC oversight entirely, whereas moving it to the private sector vis-a-vis a TCB seems to me you still get an oversight afforded by the test lab, and if you do this for an interim period as the ACIL suggests, they you can get some statistics, you can get some history as to how well this is working.

And I think when it comes to supplier giving a declaration or verifying that his product, if that's the only process in place, then here is what happens. I am a -- we've always had an issue with interpretation of the rules. I attend a TR-41.9 standards committee. Every quarterly meeting we have we discuss interpretations of the rules, and different companies have different interpretations of the rules, and some interpretations -- and when you have two possible interpretations of the rules, usually there is one interpretation that protect the network from harm and another interpretation that would make the rule of no effect and not protect the network from harm.

And so in the committee we can come to a consensus usually as to which is the right way to interpret the rule. Without any -- at least in the present process the FCC is

looking at the applications, reviewing, they can interpret the rules. They can interpret what rules are applicable to which particular equipment. The TCBs can do the same.

If no one is looking at anything, then the interpretation is left up to the manufacturer and there is no oversight.

The second thing would be waivers. Right now certain equipments require waiver of the rules, or they don't conform to all the rules, and so -- because maybe they were not contemplated by the present rules. Under some of the schemes we've heard this morning a person could, in effect, grant themselves a waiver by merely looking at the rules and saying, "That -- I've got something -- I've got a new feature on my phone. You know, my phone or my device detects stutter dial tone, so I need to be able to go off hook every five minutes to check that stutter dial tone."

So I can interpret the rules in such a way, and the effect would be I've granted myself a waiver. So I believe that those other processes don't take into account how rules will be interpreted and the fact that waivers might need to be granted in certain situations whereas the test lab, the TCB process, there has been safeguards put into place where they will not grant waivers, so they have to report cases where a waiver is needed, and also there is supposed to be a process in place whereby interpretations

are -- there is some consistency in interpretations.

Thank you.

MR. BERRESFORD: Mr. Salinas, you've had your hand up.

MR. SALINAS: Yes, sir. Jimmy Salinas.

I'd like to answer one of the questions brought up by Mr. Wagner and reverify.

The certified lab or the accredited lab does not have to be outside of a company. It can be that an accredited lab was in a company.

Also, looking into what's going on in the harmonization method that's going on throughout the United States and out to the rest of the world, that certified lab does not have to be in the United States. It can be in England. It can be in Germany. It can be in Russia. There is presently no international organization that certifies labs, but if harmonization continues, there will be. It is happening today and it will go forward and happen.

And the reason -- and to cover the scenario about Part 15 and not a lot of reports come to the FCC, yeah, Part 15 is working well and there is a reduced amount of reports to the FCC, but there is an increased amount of reports to the local phone companies. Examples I can give is a digital telephone sitting on the fortieth floor of a building getting the overshoot from a microwave, and the digital

telephone picks up that information. A digital PBX or a digital phone sitting in the lobby of a main building and a security guard keys in his radio and knocks down the unit. That's F-16 scenarios -- F-15 scenarios.

A dimmer switch in a house, properly designed dimmer switch take out my cordless phone, take out the recorder heads on my recording device and radio system. A wireless phone that's improperly built again will affect other technology that was in the same house. Something as simple as stethoscope, a new technology in the medical field is an ultrasonic stethoscope, it sends a beam that hits the patient's skin and bounces back, can be affected by any device that works in the 900 and 940 megahertz range, and there are many devices that works out there.

I can personally go open any locked door that has a card reader on that door by using a cell phone. Yeah, they're getting less reports, but I'm getting them. They are still there. They are not as massive, but they are changing.

MR. BERRESFORD: Thank you.

In the audience?

MR. GUBISH: Thank you. My name is Roland Gubish with Intertech Testing Services.

Intertech is the world's largest product and commodity testing and certification organization, so we're

familiar with the issues of testing and certification. We probably also contribute the largest number of Part 68 registration applications to the FCC collectively of any entity.

I would like to emphasize the issues that were raised earlier and bring up a few other issues regarding the activities of the proposed telecommunication certification bodies as described in the FCC rules.

They are indeed global as Mr. Salinas pointed out. TCBs may be anywhere. This is a reduction of restraint of trade, fostering trade, so we have an advantage there.

When using a telecommunication certification body, there are no accreditation requirements for the entity submitting the applications. The TCB has to assure itself that the testing was done adequately. If the laboratory submitting data is accredited under ISO Guide 25, for example, then that task of checking the validity of the data is substantially reduced. So using the TCBs removes the burden of accreditation from the submitting bodies.

There are three other benefits that are described in the requirements for accreditation of telecommunication certification bodies under ISO Guide 65. One is the listing process. The TCB takes over the activity of listing products, noting what has been approved. That becomes an activity that's taken from the FCC to the TCB. That

disappears under the DOC or verification processes.

The second activity the TCB is obliged to conduct is a surveillance to assure that the product continues to meet the requirements.

And the third activity is independence since manufacturers cannot be telecommunication certification bodies. Surely the manufacturers whose internal laboratories are accredited, ISO Guide 25, you do have a degree of independence from the manufacturing operations. The TCB provides a third level of independence.

Intertech Testing Services, as does UL, operates certification activities throughout the world. We are familiar with the independence and the benefits of these certification requirements and the benefits to the consumer of being in a competitive marketplace.

MR. BERRESFORD: Thank you.

Mr. Shinn.

MR. SHINN: Thank you. John Shinn, Nortel Networks.

As a large manufacturer, I have a rather large test lab, and it is a NAV Lab accreditation. What I want to sort of, rather than discussing the pros and cons, I think what I sort of want to do is describe two things. One is a scenario in the TCB issue.

Presently I test a product and generate a report,

and I submit to the FCC for registration and it comes out registered under the normal time delay. Under the TCB, what I fear would be that there's a possibility that the test lab, the laboratory no longer operated strictly as a paper shuffler, if you will, but will say, "Oh, I don't trust your data. I want you to test your equipment with my lab," which would create a much longer time frame and much more expense obviously, that would mitigate any kind of, or change or cost me a lot of funds that I would normally have tied up in my lab already.

So I am a little bit concerned about the use of a TCB to save me time and money. I just don't see it in the long run.

The second issue I want to talk about would be as accreditation, as we pointed out earlier, a NAV Lab shows that the test lab is independent of the manufacturer, so I don't have any real pull or demand from the manufacturing division or any groups that say we have to ship this, you know, solve or fix it or do whatever you have to do to get it out.

I see the NAV Lab or accredited test lab as being relatively independent of the manufacturing process even within the same company. And really almost like a -- as a police in a sense within our company, and I don't feel the pressures to cheat, if you will, okay.

The other thing it talks about in the international market with the -- due to the fact that I have an accredited lab, that opens up international markets, for example, also include -- and I'm an RTA for Ost Radio, Taiwan, Hong Kong, working Singapore, China. I have -- so that has opened up a lot of international markets for me because I have this accreditation, and I am an RTA for several Asia-Pacific countries, and I am continuing to grow, and I think that although Europe has its own CTAs, it's going to open up more of the market, the international market with the accreditation, and I see the accreditation to be a more something that has its own built in viability where you're going to make sure that those labs are reasonable. They are going to be monitored at least every year. They are going to have a -- you know, do the paper work. Every other year they are going to have someone actually come down and verify the competency of the people who are actually running the test. This even presently is not really done under the FCC scheme today.

Generate documents and this is how I do my test, but nobody verifies it. Actually comes up and shows up at my door and says do I really have someone sitting there in front of this machine doing it the way I say I'm going to do it. And so that's one of the reasons that I feel that accreditation is necessary.

And the second thing, the other issue I want to discuss and look at is I don't feel that I want to go through a step process, going from where we are today to a TCB to something else. And if we're going to do that, let's leave in place, like we did with the Part 15 group for the declaration of conformity, it's there for awhile. Let's continue with the FCC registration process. We go to the verification, or as I prefer, the SDOC process, and for a period of time this will also be available, and then it changed over completely. So that's my position on that.

MR. BERRESFORD: Thank you.

Ms. Wride.

MS. WRIDE: This is Anh Wride with CCL.

Just wanted to answer the statement, reply to the statement that John just made.

If the TCB requires you to use their lab to test, there is competition amongst the TCB. You do not have to go the same TCB. You can go to another one and say, "This is my test data and it's valid," and with competition there is no abuse of process amongst TCB.

Next, I would like to just support Trone's statement in the self-waiving process. As chair of TR-41.9, I've been asked many times to basically pass a judgment for ADSL modems because right now the ADSL modems when they transmit do not fit under the single power criteria allowed

in Part 68. So I've been asked to just apply only the requirements of the other parts of Part 68, other sections of Part 68, but not the signal power because it's not passing.

And so to -- if you don't have kind of safeguard, then it's very easy for, you know, not conscientious manufacturers, but for the other type of manufacturers to say, "Well, it really doesn't apply to me," and just do away with it and, you know, connect just that way and cause network harm.

MR. BERRESFORD: Mr. Roberts.

MR. ROBERTS: Thank you. Stan Roberts, ITI.

I've been listening avidly here and many of the words we heard today and yesterday like cheating, policing, judgment, someone mentioned earlier about verification. It may be prudent during the break to check what verification is. It looks as though it may come from the Latin veritas meaning truth, and I think declaring conformity or getting someone else to verify it for you, one should not be questioned if the products are okay. Verification is a very, very term to use, and I think it's serves us all well, and that's my point I'd make, that verification does in fact cover all the topics we've just been discussing if truly it means confirming the truth.

Thank you.

MR. BERRESFORD: Thank you.

Mr. Godfrey.

MR. GODFREY: I'll be more brief than last time.

On the self-waiving issue, I think we discussed yesterday at great length some of the problems with the signal power limits and how they evolve in relation to new technologies, and I would suggest that the right way to solve the problem that we've been hearing about is to transition the development of the technical standards to NSDO and the private sector that can better keep up with the pace of technology change.

And I think that when that happens then you will find that you have a written standard that manufacturers and test labs can look at and relate to the new technology, at least that's the hope of making that transition.

And then under a verification procedure or a declaration of conformity procedure, you are asserting your conformance to the standard. There is no such thing as a self-waiver under the verification procedure. It's just not -- it's just not something that can be done.

Now, if the standard is not well written and it's not clear and it's subject to interpretation of an egregious nature, such as the example we heard about, that's to be solved by fixing the standard. That's a much more efficient way to solve it than putting those judgments and

interpretations in the hands of a certification body.

MR. BERRESFORD: Thank you.

Oh, Mr. Wagner.

MR. WAGNER: John Wagoner with Lucent Technologies.

I keep kind of coming back to the way the Europeans have handled this, and I think they are very, very smart in the way they handled this whole issue. I personally favor verification as a way to getting my products to the market. That is the simplest thing for me to do.

However, if the FCC gets out of the registration business and I have one of these products, an ADSL product or anything -- anything else that will not meet the rules, perhaps only because the rules have not been developed to address the issue, and the FCC gets out of the business of telling me what to do in that case, I need somewhere to go.

Now, in the European model, they have, depending upon which directive applies, they have things like competent bodies or notified bodies which are appointed by the government regulators involved to whom the manufacturer can go and say, "Listen, I can apply all the rules except for these two parts. What do I do?" And those bodies have been given the authority of the regulatory bodies to make those decisions apart from the regulator getting involved

themselves.

And in that respect I think that if the FCC gets out of the business of making those evaluations, waivers if you will, there certainly needs to be something out there in the private sector, perhaps the TCB is an appropriate place for that to happen, but we need the ability to get a product on the market and very fast decisions on things like that, and certainly John Godfrey is correct that the proper place to fix that is in a standards committee.

But if my marketing folks are saying, "We need to release these products next month," and I'm saying, "Well, in two years we will have a standard that will allow you to do this," that is not an acceptable place to go. I need to have somewhere to go to to get an answer today.

Thank you.

MR. BERRESFORD: Thank you.

Ms. Wride.

MS. WRIDE: Yes, and I just wanted to say that under General Docket No. 98-68 the Commission has already prepared the course for these bodies that will help, you know, Lucent or any other manufacturers to have the fast and quick decision in order to comply with the sections that are not part of the standard.

And then the standard with John --

MR. BERRESFORD: And that body is called?

MS. WRIDE: TCBs.

MR. BERRESFORD: TCBs.

MS. WRIDE: Yes.

MR. BERRESFORD: Okay, thank you.

Well, I just intended to clear up some terminology when I asked that question.

(Laughter.)

Yog, did you have more questions?

MR. VARMA: I have a few more questions.

MR. BERRESFORD: Oh, okay. I'm sorry. I had --

MR. VARMA: Oh, no, no, no.

MR. BERRESFORD: -- thought you were through.

MR. VARMA: I have just one question for Bill Hurst.

Bill, we have had a good discussion here of the spectrum of choices that are in front of us. Starting at one end of the spectrum is, I believe, FCC continuing its role of certification. Moving to the other end of the spectrum, I suppose I could say would be verification, and next to verification I might perhaps list declaration of conformity, and then moving towards the other end of the spectrum will perhaps be certification by the TCBs.

You had made a plea that we must stay the course, and I was wondering if you can clarify for us if you meant by that certification by TCBs as the next logical step or